STUDY GUIDE

BLOCK 2

INTEGRATED MODULER SYSTEM

ACADEMIC SESSION. 2023

1ST YEAR MBBS

RAHBAR MEDICAL AND DENTAL COLLEGE

LAHORE

Table of Contents

List of Abbreviations

1. A	**Anatomy**
2. Ag	**Ageing**
3. B	**Biochemistry**
4. BS	**Behavioral Sciences**
5. C	**Civics**
6. CSF	**Clinical Skills Foundation**
7. CM	**Community Medicine**
8. CVS	**Cardiovascular System**
9. ENT	**Ear Nost and Throat**
10. FM	**Forensic Medicine**
11. GO	**Gynecology and Obstetrics**
12. H & L	**Hematopoietic and Lymphatic**
13. IMS	**Integrated Modular System**
14. LGIS	**Large Group Interactive Session**
15. M	**Medicine**
16. MSK	**Musculo Skeletal**
17. O	**Ophthalmology**
18. P	**Physiology**
19. Pa	**Pathology**
20. Pe	**Pediatrics**
21. PERL	**Professionalism Ethics Research Leadership**
22. Ph	**Pharmacology**
23. Psy	**Psychiatry**
24. QI	**Quran and Islamiat**
25. RMDC	**Rahbar Medical and Dental College**
26. RS	**Respiratory System**
27. S	**Surgery**
28. SDL	**Self Directed Learning**
29. SGD	**Small Group Discussion**
30. UHS	**University of Health Sciences**

INTEGRATED MODULAR SYSTEM

Dear student's purpose of developing a new curriculum is to prepare competent, empathetic and efficient medical graduates that can provide standardized quality care to ailing humanity. To achieve this goal a modular integrated curriculum is developed to align MBBS Program Outcomes with that of Seven Star Doctors competencies.

SEVEN STAR DOCTORS

The expected generic competencies in a medical graduate are as follows:

No.	Competencies	Expectations
1	**Skillful**	Competent medical graduates require sound clinical skills grounded in knowledge of patient-centered care.
2	**Knowledgeable**	This embodies knowledge of basic medical and clinical sciences required for the practice of medicine.
3	**Community Health Promoter**	To deal with problems of population-based primary health care, including health promotion and disease prevention of vulnerable populations
4	**Clinical Thinker**	The ability to critically evaluate existing knowledge, technology, and information, and to be able to reflect on it, is necessary for solving problems.
5	**Professional**	Competent medical graduates require professional values, attitudes and behaviors that embody good medical practice i.e., life-long learning, altruism, empathy, cultural and religious sensitivity, honesty, accountability, probity, ethics, communication skills, and working in teams.
6	**Scholar**	The medical graduates are expected to demonstrate constructive criticism, a spirit of enquiry, creativity and a research-oriented attitude.
7	**Leader and Role Model**	The medical graduates are expected to demonstrate exemplary conduct and leadership potential.

INTRODUCTION TO STUDY GUIDE

This document, which is also labeled as study guide that can provide students an important resource in managing their own learning. Studying is a managed way is important for educational development and also builds personal skills. Good study skills can improve your confidence, competence, and self-esteem as well as helps reduce stress and anxiety around deadlines and exams. Creating a study guide is one of the best ways to prepare for an exam and improve your results. this guide will have important resources that will help you in preparing notes and summarizing your lectures precisely. Your study guide is more than just a collection of your notes from class. It's a personal study tool, customized to fit your unique learning style and studying routine. You can prepare your own self learning schedule from the information shared in this study guide, which will facilitate you in preparing for Block Examination and ultimately for your annual examination. This study helps both teachers and student directly in preparing and managing their learning activities while indirectly facilitating the other stakeholders like parents to keep an observer eye on their child studies and college activities, medical education department to coordinating and effectively achieving learning objectives and outcomes, administration to arrange resources as per requirement of each year.

BLOCK 2
MUSCULOSKELETAL SYSTEM AND LOCOMOTION MODULE

Modular Learning Outcomes:

1. Develop an understanding of the fundamental components of the musculoskeletal system.

2. Explain the development of the structure & function of the musculoskeletal (MSK) components of limbs, back & correlate it with organization and gross congenital anomalies of the limbs.

3. Identify the anatomical features of bones, muscles & neurovascular components of the limbs with clinical correlation.

4. Describe how injury and disease alter the MSK structure & function.

5. Integrate concepts relating to various metabolic processes, their disorders and relevant lab investigations in the study of human MSK system.

6. Describe the role of the limbs (upper/lower) in musculoskeletal support, stability, and movements.

7. Describe the types, formation, stability, function & clinical significance of joints of the upper and lower limb.

8. Describe the basic histology of muscle fibers including their molecular structure (Sarcomere).

9.Explain the mechanism of excitation and contraction of skeletal and smooth muscles.

10.Discuss the psychosocial impact of musculoskeletal diseases in society.

GROSS ANATOMY			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 116	
MS-A001	● Describe the topographical anatomy of Pectoral Region ● Perform dissection of the Pectoral Region or use models to identify the key structures ● Describe muscles of the Pectoral Region with their origin, insertion, nerve supply and actions.	**Human Anatomy**	**Pectoral Region**
MS-A002	● Describe the fasciae, cutaneous nerves. and blood vessels of the Upper Limb. ● Describe the extent, attachments, and structures passing through Clavipectoral Fascia	**Human Anatomy**	**Fascia & Myotomes of Upper limb**
MS-A003	● Describe the extent, structure, neurovascular supply, lymphatic drainage of Breast (Mammary Glands)	**Human Anatomy**	**Pectoral Region & Back + Mammary Glands**
	● Define the boundaries of Triangle of Auscultation and state its clinical significance	**integrate with Medicine**	
	● Demonstrate palpation of breast and define its relation to the Fibrous septa in Carcinoma of Breast	**Integrate with Surgery**	
	● Explain the anatomical basis of position adopted for breast examination and mammography.	**Integrate with Radiology**	
	● Describe the osteology of the bones in pectoral region. ● Enumerate the muscles of pectoral girdle. ● Describe the attachments of muscle of pectoral girdle, nerve supply and actions (Pectoralis Major and minor, Subclavius, Trapezius, Latissimus Dorsi, Rhomboid major and minor, Levator Scapulae and Serratus anterior) ● Explain the role of muscles of pectoral region in stabilizing the pectoral girdle. Describe the triangle of auscultation. Mention the neurovascular supply of pectoral region and Correlate with important clinical conditions. ● Describe muscles of the back with their origin, insertion, nerve supply and actions.	**Human Anatomy**	
MS-A004	● Describe the Osteology of Clavicle (morphological features, side determination, attachments, ossification) ● Describe the functions of Clavicle in terms of weight transmission of upper limb	**Human Anatomy**	**Bones of Upper Limb: Clavicle & Scapula**

	• Describe the Osteology of Scapula (morphological features, attachments, ossification) • Determine the side and identify the landmarks of scapula • Describe the movements of Scapula associated with movements of Shoulder Girdle • Tabulate the movements of scapula with muscles acting on it • Tabulate the attachments, origin, insertion, innervation, and actions of Anterior Axioappendicular Muscles		
MS-A005	• Describe the Sternoclavicular Joint in terms of articulating surfaces, ligaments, articular disc, nerve supply, blood supply, axes and planes of movements and stability factors.	**Human Anatomy**	**Bones of Thorax, Joints of Upper Limb: Sternoclavicular Joint**
MS-A006	• Develop clear concepts of the topographical anatomy of Axilla and its contents • Describe the boundaries of Axilla. (Identification of muscles forming the boundaries of axilla) • List the contents of Axilla • Perform dissection/ Identify the Axilla and its contents • Describe Axillary Artery with reference to its 3 parts their relations, branches, and anastomoses • Describe the formation, tributaries, and drainage of Axillary Vein • Identify and demonstrate the course/ relation and branches/tributaries of axillary vessels • Describe the Axillary Lymph Nodes in terms of location, grouping, areas of drainage and clinical significance • Describe the course, relations, root value and distribution of cutaneous nerves	**Human Anatomy**	**Axilla**
MS-A007	• Describe the Osteology of Humerus (Side Determination, morphological features, attachments, ossification)	**Human Anatomy**	**Bones of upper limb: Humerus**
MS-A008	• Describe the 3 parts of Deltoid Muscle and correlate them with its unique functions. Explain its role in abduction of shoulder joint. Explain mechanism of Abduction of arm • Identify and demonstrate the movements of Axio-appendicular Muscles on Skeleton/Model • Draw and label the arterial anastomosis around shoulder joint • Describe, in detail, the Scapula-Humeral Mechanism in relation to movement of abduction. Discuss important clinical conditions	**Human Anatomy**	**Joints of Upper Limb: Shoulder Joint**

MS-A009	● Describe Rotator Cuff Muscles, state their Anatomical significance and explain Rotator Cuff Tendinitis ● Describe Frozen Shoulder in relation to anatomical features	**Integrate with Surgery**	**Rotator Cuff**
MS-A010	● Describe the formation of Brachial Plexus; Infra and Supraclavicular parts. Discuss Brachial plexus injuries ● Demonstrate and identify the formation of brachial plexus and its branches ● List the branches of brachial plexus and give their areas of distribution and muscles they innervate ● Develop clear concepts of the topographical anatomy of Scapular Region ● Tabulate the attachments, innervation, and actions of muscles of Scapular Region ● dentify & Describe Musculocutaneous Nerve in terms of its Origin, Course, Termination, Relations, Branches, and distribution. Describe and illustrate the cutaneous innervation of the arm.	**Human Anatomy**	**Nerves of Upper Limb**
MS-A011	● Describe the Brachial Artery in terms of its course, relations, branches, and distribution ● Tabulate the attachments, innervation, and actions of Triceps brachii as a muscle of Posterior Fascial Compartment of Arm ● Identify & Describe the Profunda Brachii Artery giving its course, relations, branches, and distribution	**Human Anatomy**	**Blood supply of arm**
MS-A012	● Describe Cubital Fossa with emphasis on its boundaries, contents, and clinical significance ● Demonstrate surface marking of superficial veins of arm and forearm for IV injections ● Determine the side and identify the landmarks of radius and ulna	**Human Anatomy**	**Muscles of Arm**
MS-A013	● Describe the Osteology of Radius (Side Determination, morphological features, attachments, ossification) ● Describe the Osteology of Ulna (Side Determination, morphological features, attachments, ossification)	**Human Anatomy**	**Bones of Forearm**
MS-A014	● Describe in detail, the features of each flexor muscle of forearm, proximal & distal attachments, relations, and actions. Describe the action of paradox with examples	**Human Anatomy**	**Muscle of Anterior/Flexor Compartment of Forearm**
MS-A015	● Tabulate the attachments, innervation, and actions of Extensor Muscles of the Forearm ● Describe in detail, the features of each muscle of extensor compartment of forearm, proximal &	**Human Anatomy**	**Muscle of Posterior/Extensor Compartment of Forearm**

	distal attachments, relations, and actions with nerve supply.		
MS-A016	● Identify the muscles and neurovasculature of flexor and extensor compartments of forearm ● Develop clear concepts of the topographical anatomy of Forearm ● Describe and illustrate the cutaneous innervation of the Forearm ● Compartmentalize the forearm and give its anatomical basis. ● Tabulate the attachments, innervation, and actions of Flexor & Pronator Muscles of the Forearm	**Human Anatomy**	**Forearm: Neurovascular supply & topographical anatomy**
MS-A017 **MS-A018**	● dentify the Extensor & Flexor Retinacula and describe their attachments and relations	**Human Anatomy**	**Retinacula of Forearm**
	● Demonstrate the formation of carpal tunnel and identify the contents	**Human Anatomy**	**Carpel Tunnel**
	● Describe Carpel Tunnel Syndrome	**Integrate with Surgery**	
	● Describe the features, attachments, relations and structures passing under Flexor Retinaculum	**Human Anatomy**	
MS-A019	● Describe the Origin, Course, Relations, and branches of Ulnar Artery in Forearm ● Describe the Origin, Course, Relations and list the tributaries of veins of Forearm ● Surface marking of Brachial artery, Cephalic, Median cubital, Basilic Vein, Radial & Ulnar arteries, anterior &posterior interosseous artery	**Human Anatomy**	**Forearm: Blood supply and Venous drainage**
MS-A020	● Describe the Elbow Joint in terms of articular surfaces, type, variety, ligaments, muscles producing movements, blood supply {Anastomosis around elbow joint}, nerve supply and radiological imaging.	**Human Anatomy**	**Joints of Upper Limbs: Elbow Joint**
	● Describe Carrying Angle and justify its importance in limb movement	**Integrate with Surgery**	

MS-A021	● Describe the Radioulnar Joints in terms of articular surfaces, type, variety, ligaments, muscles producing movements, blood supply, nerve supply and radiological imaging. ● Demonstrate mechanisms of movements of Pronation & Supination	**Human Anatomy**	**Joints of Upper Limbs: Radioulnar Joint**
MS-A022	● Describe the features of Interosseous Membrane with structures that pierce through it	**Human Anatomy**	**Interosseous membrane**
MS-A023	● Describe the features and explain the importance of Fibrous Flexor Sheaths, synovial flexor sheaths and extensor expansion	**Human Anatomy**	**Fascia & Muscles of Hand**
MS-A024	● Demonstrate the attachments and actions of the muscles of hand ● Identify the muscles and neurovasculature of the palm ● Explain the morphology and tabulate the attachments, innervation, and actions of Intrinsic Muscles of the Hand	**Human Anatomy**	**Hand**
MS-A025	● Demonstrate the various grips. Explain the mechanism of writing	**Human Anatomy**	**Actions of Muscles of Upper Limb as a functional Unit**
MS-A026	● Describe the formation, branches and areas of distribution of Superficial and Deep Palmar Arch	**Human Anatomy**	**Blood Vessels of Forearm& Hand**
MS-A027	● Describe the course, relations, and branches of Ulnar, Median and Radial Nerves in the Hand	**Human Anatomy**	**Nerves of Forearm& Hand**
MS-A028	● Describe the First Carpometacarpal Joint in terms of; Type, Variety, Articular Surfaces, Ligaments, Relations, Blood Supply, Innervation, movements. ● Demonstrate the movements of the 1st carpometacarpal joint ● Describe the Metacarpophalangeal & intralaryngeal Joints in terms of; Type, Variety, Articular Surfaces, Ligaments, Relations, Blood Supply, Innervation & Movements	**Human Anatomy**	**Joints of Hands**

MS-A029	● Palpate the arteries of the upper limb on a subject	**Integrate with Medicine**	**Skills**
	● Identify the topographical features of upper limb in a cross-sectional model/ specimen. ● Demonstrate and identify the anatomical landmarks of upper limb on radiographs/ CT/ MRI	**Integrate with Radiology**	
	● Mark the anatomical landmarks on a subject/ simulated model	**Human Anatomy**	
LOWER LIMB			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
MS-A030	● Draw and label the Parts of the hip bone, with its attachments, ● Describe the parts, attachments, and ossification of hip bone ● Identify the parts and bony features of the hip bone, with its attachments, important relations ● Demonstrate the side determination of hip bone, its bony features, attachments, sex differences, and important relations	**Human Anatomy**	**Hip Bone**
MS-A03	● Describe the parts, attachments, ossification, side determination, and Sex differences of femur ● Identify the parts and bony features of the femur, with its attachments, important relations. ● Demonstrate the side determination of femur, its bony features, attachments, and important relations (correlate these with fractures) ● Describe coxa Vara and coxa valga and their clinical significance	**Human Anatomy**	**Femur**
MS-A032	● Describe the extent, attachments, and modifications of Fascia Lata ● Demonstrate the attachment of fascia Lata, iliotibial tract	**Human Anatomy**	**Fascia Lata**
MS-A033	● Describe the cutaneous nerves and vessels of thigh ● Draw and label the cutaneous nerve supply of thigh ● Describe the formation, course, relations, tributaries, and termination of the superficial veins		**Neurovascular Supply of thigh**

	● Explain the anatomical justification of venesection, varicose veins, and saphenous venous grafts ● Describe the lymphatic drainage of the region with special emphasis on afferent and efferent of inguinal lymph nodes ● Identify the superficial and deep lymph nodes ● Explain the anatomical justification for enlargement of inguinal lymph nodes	**Human Anatomy**	
MS-A034	● Describe and identify the Boundaries and contents of femoral triangle ● Draw and label the Boundaries and contents of femoral triangle ● Identify the femoral sheath with its compartments ● Describe the formation of femoral sheath and its significance ● Describe the formation of femoral canal and its contents and significance ● Describe the formation and significance of femoral ring	**Human Anatomy**	**Femoral Triangle & Canal**
	● Compare and contrast the anatomical features of femoral and inguinal hernias	**Integrate with Surgery**	
MS-A035	● Describe the Muscles of anterior compartment of thigh with their proximal and distal attachments, actions, and innervation ● Demonstrate and identify the muscles of anterior compartment of thigh with their proximal and distal attachments ● Demonstrate the actions of muscles of anterior compartment of thigh ●	**Human Anatomy**	**Muscles of Anterior Compartment of Thigh**
	● Explain the anatomical basis of psoas abscess	**Integrate with Surgery**	
MS-A036	● Describe the origin, course, relations, tributaries, area of drainage and termination of femoral vein ● Describe the origin, course, relations, branches, distribution, and termination of femoral nerve ● Tabulate the muscles of anterior compartment of thigh with their attachments, nerve supply and actions	**Human Anatomy**	**Neurovascular Supply of Anterior Compartment of Thigh**
MS-A037	● Describe the formation, boundaries, contents, and significance of adductor canal ● Identify and demonstrate the boundaries and contents of adductor canal		**Adductor Canal**

		Human Anatomy	
MS-A038	● Describe Muscles of medial compartment of thigh with their proximal and distal attachments, innervation and actions ● Identify the muscles of medial compartment of thigh with their proximal and distal attachments ● Demonstrate the actions of the muscles of the compartment on self/ subject	**Human Anatomy**	**Muscles of Medial Compartment of Thigh**
MS-A039	● Describe the origin, course, relations, branches/ tributaries, distribution, and termination of neurovascular structures of medial compartment of thigh ● Identify the nerves and vessels of medial compartment of thigh along with their branches ● Describe and identify the lumbar and sacral plexus and its branches supplying the lower limb ● Describe the cutaneous nerve supply and lymphatics of the region	**Human Anatomy**	**Neurovascular supply of Medial Compartment of Thigh**
MS-A040	● Describe the subcutaneous tissue of gluteal region ● List the structures passing through the greater and lesser sciatic foramen. ● Describe the muscles of gluteal region with their proximal and distal attachments, innervation, and actions ● Identify the muscles of gluteal region with their proximal and distal attachments ● Describe the origin, course, relations, branches/ tributaries, distribution, and termination of neurovascular structures of gluteal region ● Demonstrate the actions of the muscles of gluteal region ● Draw and label the cruciate and trochanteric anastomosis	**Human Anatomy**	**Gluteal Region**
	● Explain the anatomical basis of the consequences of wrongly placed gluteal intramuscular injections and injury to superior and inferior gluteal nerves	**Integrate with Medicine**	
	● Demonstrate and identify the origin, course, relations, branches/tributaries and termination of nerves and vessels of gluteal region	**Human Anatomy**	
MS-A041	● Identify the muscles of posterior compartment of thigh with their proximal and distal attachments ● Demonstrate the actions of muscles of posterior compartment of thigh		**Muscles of Posterior**

		Human Anatomy	**Compartment of Thigh**
	• Describe the anatomical basis of signs and symptoms of Piriformis syndrome	**Integrate with Surgery**	
MS-A042	• Describe the origin, course, relations, branches, distribution, and termination of Profunda femoris artery • Describe the formation and distribution of thigh chain anastomoses of thigh (and its clinical significance)	**Human Anatomy**	**Blood supply of thigh**
MS-A043	• Describe the origin, course, relations, branches, distribution, and termination of sciatic nerve	**Human Anatomy**	**Sciatic Nerve**
	• Describe the anatomical basis of signs and symptoms of compression of or injury to sciatic nerve	**Integrate with Surgery**	
MS-A044	• Describe the hip joint with its type, articulations, ligaments, stabilizing factors, movements, and neuro-vascular supply with clinical significance. • Perform the movements of hip joint at various angles and be able to describe the muscles producing the movement. Discuss important associated clinical conditions.	**Human Anatomy**	**Hip Joint**
MS-A045	• Describe the Boundaries, relations, and contents of popliteal fossa • Draw and label boundaries, relations, and contents of popliteal fossa Identify the boundaries and contents of popliteal fossa • Describe the origin, course, relations, branches/tributaries, distribution and termination of popliteal artery and vein	**Human Anatomy**	**Popliteal Fossa**
MS-A046	• Describe parts of tibia and fibula, with their attachments, important relations, ossifications, and side determination • Identify the parts and bony features of the tibia & fibula, their bony features, attachments, important relations.	**Human Anatomy**	**Knee Joint**
	• Describe the anatomical basis for using fibula as graft	**Integrate with Surgery**	

	● Describe the attachments and role of popliteus in locking and unlocking of the knee joint ● Describe features and ossification of patella, Enlist the factors responsible for stabilizing the patella ● Describe the knee joint with its type, articulations, ligaments, movements, and neuro-vascular supply ● Explain the mechanism of locking and unlocking of knee joint with the foot on ground and off the ground ● Describe the factors responsible for stability of knee joint. ● Discuss important associated clinical conditions.	**Human Anatomy**	
MS-A04	● Describe the Muscles of anterior, lateral, and posterior compartments of leg with their proximal & distal attachments, innervation, and actions ● Identify the muscles of anterior, lateral, and posterior compartments of leg with their proximal and distal attachments	**Human Anatomy**	**Muscles of leg**
MS-A048	● Describe the origin, course, relations, branches/tributaries and termination of nerves and vessels of anterior, lateral, and posterior compartments of leg ● Describe the cutaneous nerves and vessels of leg ● Draw and label the cutaneous nerve supply and dermatomes of leg		**Neurovascular supply of Leg**
MS-A049	● Identify the extensor, flexor, and peroneal retinacula and demonstrate the structures related to them ● Describe the attachments, relations, and structures passing under cover of, extensor, peroneal, and flexor retinacula ● Identify and demonstrate the nerves and vessels of anterior, lateral, and posterior compartments of leg along with their branches ● Describe the formation of noncalcareous (Achilles tendon)	**Human Anatomy**	**Flexor, Extensor, and peroneal Reticula**
MS-A050	● Describe the articulations, muscles and neurovasculature and movements at Tibiofibular joints	**Human Anatomy**	**Tibio-fibular Joint**
MS-A051	● Describe the factors stabilizing the ankle joint. Discuss important associated clinical conditions. ● dentify and demonstrate the articulating surfaces and ligaments of ankle joint	**Human Anatomy**	**Ankle Joint**

MS-A052	● Describe the formation, attachments, and clinical significance of plantar aponeurosis ● Explain the anatomical basis of the signs and symptoms of plantar fasciitis.	**Human Anatomy** **Integrate with Orthopedics**	**Plantar Fascia**
MS-A053	● Identify the parts and bony features, attachments, and important relations of the articulated foot ● Describe the muscles of the dorsum and sole of foot with their proximal & distal attachments, innervation and actions emphasizing the role of interossei and lumbricals. ● Draw and label the muscles of the layers of sole of foot ● Demonstrate and identify the muscles and tendons with their proximal and distal attachments in the sole of foot	**Human Anatomy**	**Muscles of foot**
MS-A054	● Describe the interphalangeal, subtalar and midtarsal joints with their types, articulation, ligaments, stabilizing factors, movements, and neurovascular supply	**Human Anatomy**	**Small joints of foot**
MS-A055	● Describe the formation, components, stabilizing and maintaining factors of the arches of foot ● Describe the clinical significance of arches of foot with respect to flat foot, claw foot.	**Integrate with Orthopedics**	**Arches of foot**
MS-A056	● Describe the fibrous flexor sheaths, extensor expansions and synovial flexor sheaths	**Human Anatomy**	**Retinacula of foot**
MS-A057	● Describe the origin, course, relations, branches/tributaries, distribution, and termination of plantar vessels ● Identify the nerves and vessels on the foot along with their branches ● Describe the cutaneous nerves and vessels of foot ● Draw and label the cutaneous nerve supply and dermatomes of foot Identify the nerves and vessels in the sole of foot along with their branches ● Describe the palpation of dorsalis pedis artery &explain the clinical significance of dorsalis pedis artery	**Human Anatomy**	**Neurovascular supply of foot**
MS-A058	● Describe the surface anatomy, course, relations, tributaries, and communications of the superficial and deep veins of the lower limb	**Human Anatomy**	**Venous drainage of lower limb**

	● Draw a concept map of the superficial and deep veins of lower limb List the factors favoring venous return of the lower limb		
	● Explain the anatomical basis of the formation, and signs and symptoms of deep venous thrombosis	**Integrate with Surgery**	
	● Describe the anatomical basis of knee jerk, ankle jerk, and plantar reflex	**Integrate with Medicine**	
MS-A059	● Describe the mechanism of walking	**Human Anatomy**	**Human Gait**
	● Describe the phases of gait cycle with muscles involved in each phase ● Describe the propulsive and shock-absorbing mechanisms of foot	**Integrate with Orthopedics**	
	● Describe the weight bearing/ line of weight transmission in lower limb	**Human Anatomy**	
MS-A060	● Draw a concept map of the lymphatic drainage of lower limb	**Human Anatomy**	**Lymphatic drainage of lower limb**
MS-A061	● Draw and label the cutaneous nerves & dermatomes of the lower limb		**Cutaneous dermatomes of lower limb**
MS-A062	● Demonstrate the surface marking of nerves and vessels of lower limb ● Demonstrate the surface marking of bony landmarks of lower limb ● Identify the topographical features of lower limb in a cross-sectional model ● Demonstrate and identify the features of bones and joints of lower limb on radiograph/ CT scan/ MR	**Integrate with Radiology**	**Topographical and radiological anatomy of lower limb**
MS-A063	● Describe the common fractures of the following bone with the risk factors, clinical presentations, and management: a) Clavicle b) Humerus c) Radius d) Ulna e) Small bones of hand f) Hip bone.	**Orthopedics and trauma**	**Bone Fracture**

	g) Femur h) Tibia i) Fibula j) Small bones of foot		
MS-A064	● Describe the dislocations of the following joints with the risk factors and clinical presentations, and brief management: a) Shoulder joint b) Elbow joint Interphalangeal joint of hand c) Hip joint d) Knee joint e) Ankle joint	**Orthopedics and trauma**	**Joint Dislocation**
EMBRYOLOGY & POST-NATAL DEVELOPMENT			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 6	
MS-A065	● Name the molecular and genetic factors involved in the development of musculoskeletal system ● Describe the development of skeletal muscle List the derivatives of epaxial and hypaxial musculature of limb ● Briefly discuss the development of cardiac and smooth muscle (Detail to be covered in respective modules later). ● Describe the developmental basis of myotome ● Draw a concept map highlighting the sequence of events pertaining to smooth/ cardiac/ skeletal muscles	**Human Embryology**	**Development of Muscles**
MS-A066	● List the factors contributing to the development of limb ● Describe the role of AER and Zone of polarizing activity in development of limb ● Describe the process of limb development and limb growth ● Draw a concept map pertaining to development of limb ● Compare and contrast the development of upper limb with the development of lower limb	**Human Embryology**	**Development of Limb**
MS-A067	● Describe the embryological basis of cutaneous innervation of limb ● Describe the embryological basis of blood supply of limbs and concept of axial artery	**Human Embryology**	**Development of Neurovascular supply of limbs**
MS-A068	● Describe the embryological basis of congenital anomalies related to muscular system.	**Human Embryology**	**Congenital anomalies of limbs**

	● Describe the clinical presentations and embryological basis of a) Amelia b) Meromelia c) Phocomelia d) Split-Hand/Foot Malformations e) Polydactyly, Brachydactyly, Syndactyly f) Congenital club foot	**Integrate with Paedriatics**	
MS-A069	● Describe the developmental process of cartilage and bone ● Describe the process of histogenesis of cartilage and bone	**Human Embryology**	**Development of Cartilage**
MS-A070	● Describe the developmental process of intramembranous and endochondral ossification	**Human Embryology**	**Process of Ossification**
MS-A07	● Describe the clinical picture and explain the embryological basis of Axial skeletal anomalies ● Describe the developmental process of Vertebral Column	**Human Embryology**	**Development of Axial skeleton**
MICROSCOPIC ANATOMY			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 6	
MS-A072	● Describe the microscopic structure and ultramicroscopic structure of skeletal muscle ●	**Histology**	Histology of Muscles
	● Explain the basis of myasthenia gravis and Duchene muscular dystrophy	**Integrate with Medicine**	
	● Describe the microscopic and ultramicroscopic structure of cardiac muscle ● Describe the microscopic and ultramicroscopic of smooth muscle ● Compare and contrast the histological features of three types of muscle tissue	**Histology**	
MS-A073	● Describe the regeneration of muscle, hyperplasia, and hypertrophy of muscle fiber	**Integrate with Pathology**	**Functional Histology**
	● Explain the histopathological basis of leiomyoma	**Histopathology**	
	● Describe the histological basis of Duchenne Muscular Dystrophy	**Integrate with Pathology**	

MS-A074	● Describe the light and electron microscopic structure of bone cells	**Histology**	**Histology of Osseous tissue**
	● Describe the histological justification for osteoporosis, osteopenia. ● Describe the histological basis for bone repair after fractures	**Integrate with Pathology**	
MS-A075	● Describe the light and electron microscopic structure of compact and spongy bone ● Compare and contrast the microscopic features of compact and spongy bone ● Draw a concept map to explain the characteristic features of ossification ● Draw and label the zones seen in an epiphyseal growth plate	**Histology**	**Histology of Bone**
MS-A076	● Describe the metabolic role of bone	**Integrate with Medicine**	**Functional Histology of Bone**
	● Describe the clinical presentation of osteoporosis, osteopenia	**Integrate with Orthopedics**	
MS-A077	● Describe the microscopic and ultramicroscopic structure of all types of cartilage ● Compare and contrast the structure of cartilage and bone matrix ● Tabulate the differences between three types of cartilage	**Histology**	**Histology of Cartilage**
MS-A078	● Describe the histological basis for bone & Cartilage growth and repair	**Histology**	**Mechanism of Bone growth**
HISTOLOGY			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 10	
MSA-079	● Draw and label the histology of skeletal muscle ● Draw and label the histology of smooth muscle ● Draw and label the histology of cardiac muscle	**Histology**	**Histology of Muscles**
MS-A080	● Draw and label the histological picture of compact bone ● Draw and label the histological picture of spongy bone	**Histology**	**Histology of Bones**
MS-A08	● Draw and label the microscopic structure of elastic cartilage ● Draw and label the microscopic structure of fibro cartilage	**Histology**	**Histology of Cartilage**

MEDICAL PHYSIOLOGY			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 34	
MS-P001	● Explain the Physiological basis of membrane potential ● Explain diffusion potentials of Na & K ● Define Nernst potential ● Explain Physiological Basis of Nernst potential ● Write the Nernst equation. ● Calculate Nernst potential for Na & K ● Explain the effects of altering the concentration of Na+, K+, Ca on the equilibrium potential for that ion	**Medical Physiology**	**Diffusion / Equilibrium Potentials & Nernst potential**
MS-P002	● Describe the normal distribution of Na+, K+, Ca and Cl- across the cell membrane ● Explain physiological basis of Goldman equation ● Clarify the role of Goldman equation in generation of RMP.		**Goldman Equation**
MS-P003	● Describe the Physiological basis of generation of RMP ● Explain the effects of hyperkalemia and Hypokalemia on the RMP ● Name the membrane stabilizers		**Resting Membrane Potential in Neurons**
	● Explain the physiological basis of action of Local Anesthetics.	**Medical Physiology integrate with Anesthesiolo gy**	
MS-P005	● Classify neurons functionally. ● Classify nerve fibers according to Erlanger & Gasser Classification	**Medical Physiology**	**Neurons**
MS-P006	● Define Action Potential ● Enlist the Properties of action potential ● Describe the ionic basis of an action potential. ● Explain the phases of action potential. ● Explain the effects of hyperkalemia and Hypokalemia on the action potential. ● Draw monophasic action potential. ● Explain absolute and relative refractory period		**Action Potential of Neurons**
MS-P007	● Explain the role of other ions in action potential. ● Elaborate the effect of hypocalcemia on neuron excitability		**Role of other ions in action potential**
MS-P008	● Explain Physiological basis& properties of Graded potential ● Draw & explain Physiological basis & properties of compound action potential.		**Local / Graded potentials**

	● Contrast between action potential and graded potential ● Describe the ionic basis of excitatory post synaptic potential (EPSP), inhibitory post synaptic potential (IPSP), end plate potential (EPP).		
MS-P009	● Classify and explain Physiological basis of different types of synapses ● Elaborate how signal transmission takes place across chemical synapse		**Synapse**
MS-P010	● Explain the mechanism of conduction of Nerve impulse in myelinated and unmyelinated nerve fibers. ● Elaborate significance of saltatory conduction		**Conduction of Nerve impulse**
MS-P011	● Enlist the types of nerve injury ● Explain Wallerian degeneration. ● Describe the process of regeneration of nerve fiber.		**Nerve Degeneration**
	● Describe the causes, features & pathophysiology of Multiple sclerosis, GB syndrome.	**Medical Physiology integrate with Medicine**	
MS-P012	● Discuss the physiological anatomy of skeletal muscles. ● Differentiate b/w skeletal, smooth, and cardiac muscle	**Medical Physiology**	**Skeletal muscle**
MS-P013	● Differentiate between isometric and isotonic contraction by giving examples. ● Compare the fast and slow muscle fibers.		**Characterist ics of whole muscle contraction**
MS-P014	● Explain the mechanism of summation and Tetanization. ● Describe staircase effect/Treppe phenomena ● Discuss the mechanism of skeletal muscle fatigue		**Mechanics of muscle contraction**
	● Explain the physiological basis of rigor mortis	**Medical Physiology integrate with Forensic medicine**	
MS-P015	● Describe the physiological anatomy of NMJ ● Mechanism of Neuromuscular transmission & generation of End Plate Potential	**Medical Physiology**	**Neuromusc ular junction**
	● Explain features, pathophysiology & treatment of myasthenia Gravis	**Medical Physiology integrate with Medicine**	

	● Discuss the steps/ events of excitation contraction coupling in skeletal muscle.	**Medical Physiology**	
MS-P016	● Differentiate between types of smooth muscles. ● Describe mechanism of smooth muscle contraction in comparison to skeletal muscle. ● Explain the physiological anatomy of neuromuscular junction of smooth muscle Explain the types of action potential in smooth muscles. ● Explain the LATCH mechanism Describe the significance of LATCH mechanism. ● Explain the nervous and hormonal control of Smooth Muscle Contraction.	**Medical Physiology**	**Smooth Muscle**
MS-P017	● Enlist various types of muscle disorders ● Describe the pathophysiology & features of muscular dystrophy.	**Medicine**	**Muscular Disorders**
MS-P018	● Define Myopathy ● Enlist various causes of myopathy ● Outline management of myopathy	**Medicine**	**Myopathy**
MS-P019	● Define osteoporosis ● Identify risk factors for osteoporosis ● Outline management strategies	**Geriatrics/ Medicine**	**Metabolic bone diseases: Osteoporosis**
MS-P020	● Define osteomalacia ● Identify risk factors for osteomalacia ● Outline management strategies	**Medicine/ Rheumatolo gy**	**Metabolic bone diseases: Osteomalaci a**
MS-P021	● Define rickets ● Identify risk factors for rickets ● Outline management strategies	**Pediatrics**	**Metabolic bone diseases: Rickets**
MEDICAL BIOCHEMISTRY			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 24	
MS-B001	● Classify amino acids based on polarity, nutritional importance, and glucogenic/Ketogenic properties	**Biochemistry**	**Classificatio n of Amino acids**
MS-B002	● Explain the structure, physical, chemical properties of amino acids and their biomedical importance		**Amino Acids**
MS-B003	● Classify proteins based on functions and physicochemical properties. ● Explain its biomedical importance. ● Distinguish between class A and B proteins. ● Discuss structure and functions of Fibrous proteins (collagen and Elastin) ● Interpret diseases associated with them on basis of sign/symptoms and data		**Classification of Proteins**

MS-B004	● Explain the structural levels of proteins ● Differentiate between alpha helix and beta pleated protein structures ● Identify bondings at different levels of proteins	**Biochemistry**	**Structure of proteins**
MS-B005	● Describe the role of chaperons in protein folding	**Biochemistry**	
	● Interpret disorders related to protein misfolding on basis of given data. ● Describe the biochemical basis of Alzheimer's disease/ prion disease.	**Integrate with pathology & Medicine**	**Protein misfolding**
MS-B006	● Describe biomedical importance of Mono-, Oligo and Polysaccharides. ● Discuss isomerization of carbohydrates ● Explain physical and chemical properties of carbohydrates ● Differentiate proteoglycan and glycoprotein and explain their functions	**Biochemistry**	**Carbohydra tes Chemistry**
MS-B007	● Describe the components of extracellular matrix ● Describe the sources, metabolism, and biochemical functions of vitamin C ● Describe structure, functions, and clinical significance of glycosaminoglycans. ● Interpret the importance of vitamin C in collagen synthesis.		**ECM and collagen synthesis**
MS-B008	● Identify the defects in collagen synthesis based on given data. (Osteogenesis Imperfecta)	**Integrate with Medicine**	**Vitamin D metabolism**
	● Explain dietary sources, metabolism and biochemical functions of vitamin D	**Biochemistry**	
	● Interpret Rickets and osteomalacia on basis of sign. Symptoms and clinical data	**Integrate with Medicine/Orthopedics**	
MS-B009	● Explain dietary sources, metabolism and biochemical functions of calcium and phosphate ● Discuss regulation of calcium metabolism in bone metabolism and role of parathyroid and calcitriol in it	**Biochemistry**	**Calcium and Phosphate metabolism**
MS-B010	● Interpret genetic basis of Duchene muscular dystrophy	**Integrate with Pathology**	**Genetic basis of disease**
MEDICAL BIOCHEMISTRY			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 6	
MS-B011	● Detection of amino acids by paper chromatography.	**Biochemistry**	**Chromatography**
MS-B012	● Estimation of total proteins by kit method/dipstick methods.		**Total proteins**

MS-B013	● Estimation of albumin and globulin		**Albumin/ globulin**
MS-B014	● Detection of calcium by micro lab.		**Calcium**
MS-B015	● Prepare different types of solution Molar, Molal, Normal and percentages.		**Solutions**
PATHOPHYSIOLOGY AND PHARMACOTHERAPEUTICS			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 4+7=11	
MS-Ph001	● Explain the mechanism by which drugs can stimulate NMJ ● Explain the mechanism by which drugs can block NMJ.	**Pharmacology & Therapeutics**	**Drugs acting on Neuromuscular Junction (NMJ)**
MS-Ph002	● Outline the pharmacological concepts of drugs used in Myasthenia gravis.		**Drugs in Myasthenia Gravis**
MS-Ph003	● Outline the pharmacological concepts of drugs used as local anesthetics		**Local Anesthetics**
MS-Pa001	● Describe the hyperplasia, hypertrophy, and atrophy of muscle fiber ● Explain the histopathological basis of leiomyoma	**Pathology**	**Muscle remodeling**
MS-Pa002	● Describe the histological basis of Duchenne Muscular Dystrophy ● Describe the histopathological basis and clinical presentation of Alzheimer`s Disease, Multiple Sclerosis and Astrocytoma		**Diseases of Muscle**
MS-Pa003	● Describe the clinical presentation and histological justification for osteoporosis, osteopetrosis ● Describe the histological basis for bone repair after fractures		**Diseases of Bone**
MS-Pa004	● Describe the histological basis for cartilage growth and repair		**Disease of Cartilage**
AGING			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 4	
MS-Ag001	● Discuss the effect of age on bone fragility and its implications with management	**Geriatrics/ Medicine/ Biochemistry**	**Bone**
MS-Ag002	● Discuss the effect of age on loss of cartilage resilience and its implications and management		**Cartilage**
MS-Ag003	● Discuss the effect of age on Muscular strength and its implications and management		**Muscle**
MS-Ag 004	● Explain the protective effect of estrogen (female sex hormone) on bone mineral density and relate it to increased prevalence of postmenopausal fractures in women		**Effect of estrogen on BMD**
DISEASE PREVENTION AND IMPACT			

THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 16+3=19	
MS-CM00	● Explain causes of low back pain ● Describe prevention of low back pain	**Community Medicine and Public Health**	**Back Pain**
MS-CM002	● Describe causes and prevention of musculoskeletal disorders (MSD)related to child labour		**MSD related to child labour**
MS-CM003	● Describe work related musculoskeletal disorders addition with its burden/epidemiology ● Identify risk factors of MSD at workplace ● Describe prevention of exposure to risk factors related to workplace		**Work related Musculoskeletal disorders**
MS-CM004	● Describe MSD related to mobile addition with its burden/epidemiology ● Identify risk factors relates to MSD due to excessive mobile usage. ● Describe the preventive strategies for mobile addiction related MSD.	**Community Medicine and Public Health**	**MSD related to mobile usage**
MS-CM005	● Describe application of ergonomics in MSD related to above disorders.	**Community Medicine and Public Health**	**Ergonomics**
MS-CM006	● Describe the concept of non-communicable diseases		**No communicable disease**
MS-CM007	● Identify the risk factors in the community for Osteoporosis ● Learn and apply interventions to prevent the risk factors for various musculoskeletal diseases in community.		**Risk factor assessment of Musculoskeletal diseases**
MS-BhS001	● Identify and deal with the various psychosocial aspects of Musculoskeletal conditions (such as Osteoarthritis, Osteomyelitis, Rheumatoid arthritis, Gout, chronic back pain, psychosomatic complaints) and Neuromuscular conditions (Muscular dystrophy, Myasthenia Gravis, Sclerosis) on Individual, Family and Society	**Behavioral Sciences**	**Psychosocial factors influencing chronic illnesses**
MS-BhS002	● Identify the psychosocial risk factors as mediating factors between illness and its effect ● Discuss the role of psychological variables like coping, social support, and other health cognitions in mediating between illness and its effect		**Psychosocial Impact of Disease and its management**

Musculoskeletal & Locomotion

Weekly Planner

1 Year MBBS (Session 2022-23) MSK

WEEK – 1 **Theme:**

Date 05 June - 09 June 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm		3:00pm-4:00pm
Monday 5 June 23	LGIS Anatomy SH MS-A-072 Histology of Muscles Prof. Qurratulain	LGIS Physiology Neurons 004 Dr Iram	B R E A K	LGIS Biochemistry MS-B-001 Classification of amino acids *H.O.D	SGD Gross anatomy MS-A-001 Pectoral region:Clavicle *H.O.D	SGD Gross anatomy MS-A-001 Pectoral region:Clavicle *H.O.D	Practicals Histology (A) C-FRC (B) Biochemistry (C)		S D L
Tuesday 6 June 23	LGIS Physiology Nerve Fibers 005 Dr Iram	LGIS Anatomy SH MS-A-073 Clinical corelates of Histology of Muscles Prof. Qurratulain		SGD Gross anatomy MS-A-001 Pectoral region:Scapula *H.O.D	Meuseum Activity Gross anatomy MS-A-001. *H.O.D	LGIS Gross anatomy MS-A-001 Pectoral region: Scapula Dr. Zubia	Practicals Histology (B) C-FRC (C) Biochemistry (A)		
Wednesday 7 June 23	LGIS Biochemistry MS-B-002 Structure and properties of amino acids *H.O.D	LGIS Gross anatomy MS-A-001 Pectoral region: Anterior chest wall Dr. Zubia		LGIS Physiology Nernst Potential 001 H.O.D	Learning Activity MS-A-001 Pectoral region: Anterior chest wall *H.O.D	SGD Gross anatomy MS-A-001 Pectoral region: Anterior chest wall *H.O.D	Practicals Histology (C) C-FRC (A) Biochemistry (B)		
Thursday 8 June 23	LGIS Community Medicine *H.O.D	LGIS Biochemistry MS-B-003 Classification, function,properties and biomedical importance of proteins *H.O.D		LGIS Physiology Nernst Potential 001 H.O.D	SGD Gross anatomy MS-A-002 Pectoral region: Mammary Glands *H.O.D	Learning Activity Gross anatomy MS-A-002 Pectoral region: Mammary Glands *H.O.D	SGD Gross anatomy MS-A-002 Pectoral region: Mammary Glands *H.O.D	2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Friday 9 June 23	LGIS Community Medicine *H.O.D	LGIS Physiology Synapsis 009 Dr Iram		LGIS Anatomy Integration withRadiology MS-A-002 *H.O.D	11.15-1.15. Gross Anatomy PBL. Integration with surgery MS-A-002 Breast cancer *H.O.D	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm. Quran		

Practical Topics: (Anatomy = MS-A-079, Biochemistry= MS-B-011)

LGIS= Large Group Interactive Session, SGD= Small Group Discusstion, SDL=Self Directed Learning, * as per direction of respective HOD

Weekly Planner

1 Year MBBS (Session 2022-23) MSK

WEEK – 2 **Theme:**

Date 12 June to 16 June2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm	3:00pm-4:00pm
Monday 12 June23	LGIS Anatomy TEST *H.O.D	LGIS Physiology Synases 010 Dr Iram	B R E A K	LGIS Biochemistry MS-B-003 Class A and Class B proteins *H.O.D	SGD Gross anatomy MS-A-003 Pectoral girdle and back *H.O.D	SGD Gross anatomy MS-A-003 Pectoral girdle and back *H.O.D	Practicals Histology (A) C-FRC (B) Biochemistry (C)	S D L
Tuesday 13 June 23	LGIS Physiology TEST	LGIS Anatomy SH MS-A-074 Histology of bone Prof. Anatomy		SGD Gross anatomy MS-A-004,005 Pectoral girdle and back: joints of pectoral girdle *H.O.D	Learning Activity Gross Anatomy	SGD Gross anatomy MS-A-004,005 Pectoral girdle and back: joints of pectoral girdle	Practicals Histology (B) C-FRC (C) Biochemistry (A)	
Wednesday 14 June 23	LGIS Biochemistry MS-B-003 Fibrous proteins and their clinical corelates *H.O.D	LGIS Anatomy SH MS-A-075 Histology of Bone *H.O.D		LGIS Physiology Nernst Potential 001 H.O.D	SGD Gross anatomy MS-A-006 Axilla *H.O.D	SGD Gross anatomy MS-A-006 Axilla *H.O.D	Practicals Histology (C) C-FRC (A) Biochemistry (B)	
Thursday 15 June 23	LGIS Community Medicine *H.O.D	LGIS Biochemistry MS-B-004 Structural organization of proteins *H.O.D		LGIS Physiology Goldman Equation 002 H.O.D	SGD Gross anatomy MS-A-006 Axilla *H.O.D	Learning Activity Gross Anatomy	SGD Gross anatomy MS-A-006 Axilla *H.O.D / 2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Friday 16 June 23 To be covered on 14-07-2023	LGIS Community Medicine *H.O.D	LGIS Physiology Synapses 011 Dr Iram		Learning Activity Gross Anatomy	11.15-1.15. Flipped classroom Gross anatomy MS-A-007 Upper limb bones *H.O.D	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm. Quran	

Practical Topics: (Anatomy = MS-A-080 , Biochemistry= MS-B-012)

LGIS= Large Group Interactive Session, SGD= Small Group Discusstion, SDL=Self Directed Learning, * as per direction of respective HOD

Weekly Planner

1 Year MBBS (Session 2022-23) MSK

WEEK – 3 **Theme:**

Date 17 July to 21 July 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm		3:00pm-4:00pm
Monday 17 July 23	LGIS Anatomy TEST *H.O.D	LGIS Physiology NM Junction 015 Dr Sara	BREAK	LGIS Biochemistry MS-B-004 Structural organization of proteins *H.O.D	SGD Gross anatomy MS-A-008 Upper limb joints *H.O.D	SGD Gross anatomy MS-A-008 Upper limb joints *H.O.D	Practicals Histology (A) C-FRC (B) Biochemistry (C)		SDL
Tuesday 18 July 23	LGIS Physiology NM Junction 015 Dr Sara	LGIS Anatomy SH MS-A-076,077 Histology of cartilage *H.O.D		PBL MS-A-009 Gross Anatomy and surgery integration *H.O.D	PBL MS-A-009 Gross Anatomy and surgery integration *H.O.D	SGD Gross anatomy MS-A-010 Upper limb nerves *H.O.D	Practicals Histology (B) C-FRC (C) Biochemistry (A)		
Wednesday 19 July 23	TEST. & LGIS Biochemistry MS-B-005 Role of chaperon in protein folding *H.O.D	LGIS Anatomy Sh MS-A-078 Growth and repair of cartilage and bone *H.O.D		LGIS Physiology Smooth Muscle 016 Dr Saima	SGD Gross anatomy MS-A-010 Upper limb nerves *H.O.D	SGD Gross anatomy MS-A-011,012 Blood supply of arm *H.O.D	Practicals Histology (C) C-FRC (A) Biochemistry (B)		
Thursday 20 July 23	LGIS Community Medicine *H.O.D	LGIS Biochemistry MS-B-005 Protein misfolding *H.O.D		LGIS Physiology Smooth Muscle 016 Dr Saima	SGD Gross anatomy MS-A-011,012 Blood supply of arm *H.O.D	Learning Activity Gross Anatomy	Hands on activity Gross anatomy MS-A-012 Surface marking of veins for IV injections *H.O.D	2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Friday 21 July 23	LGIS Community Medicine *H.O.D	LGIS BS *H.O.D		Flipped Classroom Gross Anatomy MS-A-014	11.15-1.15. SGD Gross anatomy MS-A-013 Bones of forearm *H.O.D	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm. Quran		

Practical Topics: (Anatomy = MS-A-081 , Biochemistry= MS-B-013)

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Weekly Planner

1 Year MBBS (Session 2022-23) MSK

WEEK – 5 **Theme:**

Date 31 July to 04 August 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm	3:00pm-4:00pm
Monday 31 July 23	LGIS Anatomy TEST *H.O.D	LGIS Physiology Smooth Muscle 016 Dr Saima	BREAK	LGIS Biochemistry MS-B-006 Carbohydrate chemistry	SGD Gross anatomy *H.O.D	SGD Gross anatomy *H.O.D	Practicals Histology (A) C-FRC (B) C-FRC(C)	SDL
Tuesday 01 August 23	LGIS Physiology Smooth Muscle 016 Dr Saima	LGIS Anatomy SE MS-A-067,068 Development of limbs *H.O.D		LGIS Anatomy HL-A-001 *H.O.D	LGIS Anatomy *H.O.D	LGIS Anatomy HL-A-001 *H.O.D	Practicals Histology (A) C-FRC (B) C-FRC(C)	
Wednesday 02 August 23	TEST & LGIS Biochemistry MS-B-006 Carbohydrate chemistry *H.O.D	LGIS Anatomy SE MS-A-069 Development of skeletal system *H.O.D		LGIS Physiology AP in neurons 006 H.O.D	LGIS Anatomy HL-A-001 *H.O.D	LGIS Anatomy HL-A-001 *H.O.D	Practicals Histology (C) C-FRC (A) C-FRC (B)	
Thursday 03 August 23	LGIS Community Medicine *H.O.D	LGIS Biochemistry MS-B-007 ECM and collagen synthesis *H.O.D		LGIS Physiology AP in neurons 006 H.O.D	LGIS Anatomy HLA-002 *H.O.D	LGIS Anatomy HL-A-001 *H.O.D	LGIS Anatomy HL-A-001 *H.O.D / 2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Friday 04 August 23	LGIS Community Medicine *H.O.D	LGIS Pharmacology *H.O.D		LGIS Anatomy HLA-002 *H.O.D	11.15-1.15. LGIS Anatomy HLA-002 *H.O.D	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm. Quran	

Practical Topics: (Anatomy, Biochemistry= MS-B-015)

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*H.O.D

Practical Topics: (Anatomy = MS-A-081 , Biochemistry= MS-B-014)

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Weekly Planner

1 Year MBBS (Session 2022-23) MSK

WEEK – 6 **Theme:**

Date 07 August to 11 August 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm 2:15 p.m	2:15p.m-3:0	3:00pm-4:00pm
Monday 07 August 23	LGIS Anatomy TEST *H.O.D	LGIS Physiology Muscular Disorders 017 Medine		LGIS Biochemistry MS-B-007 ECM and collagen synthesis	SGD Gross anatomy *H.O.D	SGD Gross anatomy *H.O.D	LGIS Pathology HL-Pa-001 *H.O.D	LGIS PERLs *H.O.D	S D L

Weekly Planner

1 Year MBBS (Session 2022-23)

WEEK – 7 **Theme:**

Date 14 August to 18 August2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm		3:00pm-4:00pm
Monday 14 August 23 holiday	LGIS Anatomy TEST *H.O.D	LGIS Physiology *H.O.D	B R E A K	LGIS Biochemistry MS-B-008 *H.O.D	SGD Gross anatomy *H.O.D	SGD Gross anatomy *H.O.D	LGIS Pathology HL-Pa-001 *H.O.D	LGIS PERLs *H.O.D	S D L
Tuesday 15 August 23	LGIS Physiology Osteoperosis, 019, Med/Geriatrics	LGIS Anatomy *H.O.D		LGIS Anatomy HL-A-001 *H.O.D	LGIS Anatomy *H.O.D	LGIS Anatomy HL-A-001 *H.O.D	LGIS Pathology HL-Pa-001 *H.O.D	LGIS PERLs *H.O.D	
Wednesday 16 August 23	TEST. & LGIS Biochemistry MS-B-008 Vit D Metabolism *H.O.D	LGIS Anatomy *H.O.D		LGIS Physiology Local Potential 008 H.O.D	LGIS Anatomy HL-A-001 *H.O.D	LGIS Anatomy HL-A-001 *H.O.D	LGIS Pathology HL-Pa-001 *H.O.D	LGIS PERLs *H.O.D	
Thursday 17 August 23	LGIS Community Medicine *H.O.D	LGIS Biochemistry MS-B-009 calcium and phosphate *H.O.D		LGIS Physiology Local Potential 008 H.O.D	LGIS Anatomy HLA-002 *H.O.D	LGIS Anatomy HL-A-001 *H.O.D	LGIS Anatomy HL-A-001 *H.O.D	2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Friday 18 August 23	LGIS Pathology *H.O.D	LGIS Pharmacology *H.O.D		LGIS Anatomy HLA-002 *H.O.D	11.15-1.15. LGIS Anatomy HLA-002 *H.O.D	1:15pm-2:00pm Jumma Prayer	LGIS Community Medicine *H.O.D		

Practical Topics: (Anatomy = HL-A-004 , Physiology , Biochemistry= HL-B-009)

LGIS= Large Group Interactive Session, SGD= Small Group Discusstion, SDL=Self Directed Learning, * as per direction of respective HOD

Weekly Planner

1 Year MBBS (Session 2022-23) MSK

WEEK – 8 **Theme:**

Date 21 August to 25 August 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15p.m	2:15p.m--3:00pm	3:00pm-4:00pm
Monday 21 August 23	MODULE TEST	LGIS Physiology [illegible] Osteomalacia 020 Med/Rheumatology	B R E A K	LGIS Biochemistry MS-B-009 calcium and phosphate *H.O.D	SGD Gross anatomy *H.O.D	SGD Gross anatomy *H.O.D	LGIS Pathology HL-Pa-001 *H.O.D	LGIS Aging *H.O.D	S D L
Tuesday 22 August 23	LGIS Physiology Rickets 021 Med/Peds	LGIS Anatomy *H.O.D		LGIS Anatomy HL-A-001 *H.O.D	LGIS Anatomy *H.O.D	LGIS Anatomy HL-A-001 *H.O.D	LGIS Aging *H.O.D	LGIS PERLs *H.O.D	
Wednesday 23 August 23	LGIS Biochemistry MS-B-009 calcium and phosphate *H.O.D	LGIS Anatomy *H.O.D		LGIS Physiology Local Potential 008 HOD	LGIS Anatomy HL-A-001 *H.O.D	LGIS Anatomy HL-A-001 *H.O.D	LGIS PERLs *H.O.D	LGIS Aging *H.O.D	
Thursday 24 August 23	LGIS Community Medicine *H.O.D	LGIS Biochemistry MS-B-010 Duchenne muscular dystrophy *H.O.D		LGIS Physiology Local Potential 008 H.O.D	LGIS Anatomy HLA-002 *H.O.D	LGIS Anatomy HL-A-001 *H.O.D	LGIS Anatomy HL-A-001 *H.O.D	2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Friday 25 August 23	LGIS Aging *H.O.D	LGIS Pharmacology *H.O.D		LGIS Anatomy HLA-002 *H.O.D	11.15-1.15. LGIS Anatomy HLA-002 *H.O.D	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm. *LGIS Community Medicine H.O.D*		

Practical Topics: (Anatomy = HL-A-004 , Physiology , Biochemistry= HL-B-009)

LGIS= Large Group Interactive Session, SGD= Small Group Discusstion, SDL=Self Directed Learning, * as per direction of respective HOD

Musculoskeletal System C-FRC Schedule 1ST year MBBS Session 2023-2027

S.NO	Week	Date/Time	Topic	Batch No	Venue	Facilitator	Log Book Entries
1.	Week 1	05-06-23 01.15pm-03.00pm	Examine strength & power of the upper limb & Lower limb	B	Physiology Lab	*HOD	3 + 3 Log book Entries of upper & lower limb
2.	Week 1	06-06-23 01.15pm-03.00pm	Examine strength & power of the upper limb & Lower limb	C	Physiology Lab	*HOD	3 + 3 Log book Entries of upper & lower limb
3.	Week 1	07-06-23 01.15pm-03.00pm	Examine strength & power of the upper limb & Lower limb	A	Physiology Lab	*HOD	3 + 3 Log book Entries of upper & lower limb
4.	Week 2	12-06-23 01.15pm-03.00pm	Measure body temperature using a mercury/digital thermometer	B	Physiology Lab	*HOD	3 Log book Entries
5.	Week 2	13-06-23 01.15pm-03.00pm	Measure body temperature using a mercury/digital thermometer	C	Physiology Lab	*HOD	3 Log Book Entries
6.	Week 2	14-06-23 01.15pm-03.00pm	Measure body temperature using a mercury/digital thermometer	A	Physiology Lab	*HOD	3 Log Book Entries

7.	Week 3	17-07-23 01.15pm-03.00pm	Examine the wrist and shoulder joint for functionality	B	Physiology Lab	*HOD Anatomy & Orthopaedic Dept.	3 + 3 Log book Entries of wrist and shoulder joint
8.	Week 3	18-07-23 01.15pm-03.00pm	Examine the wrist and shoulder joint for functionality	C	Physiology Lab	*HOD Anatomy & Orthopaedic dept.	3 + 3 Log book Entries of wrist and shoulder joint
9.	Week 3	19-07-23 01.15pm-03.00pm	Examine the wrist and shoulder joint for functionality	A	Physiology Lab	*HOD Anatomy & Orthopaedic dept.	3 + 3 Log book Entries of wrist and shoulder joint
10.	Week 4	24-07-23 01.15pm-03.00pm	Examine the knee and hip joint for functionality	B	Physiology Lab	*HOD Anatomy & Orthopaedic dept.	3 + 3 Log book Entries of knee and hip joint
11.	Week 4	25-07-23 01.15pm-03.00pm	Examine the knee and hip joint for functionality	C	Physiology Lab	*HOD Anatomy & Orthopaedic dept.	3 + 3 Log book Entries of knee and hip joint
12.	Week 4	26-07-23 01.15pm-03.00pm	Examine the knee and hip joint for functionality	A	Physiology Lab	*HOD Anatomy & Orthopaedic dept.	3 + 3 Log book Entries of knee and hip joint
13.	Week 5	31-07-23 01.15pm-03.00pm	Identify common fractures showing in x rays of upper & lower limb.	B	Physiology Lab	*HOD Anatomy & Radiology dept.	3 + 3 Log book Entries fractures showing in x rays of upper & lower limb.

14.	Week 5	01-08-23 01.15pm-03.00pm	Identify common fractures showing in x rays of upper & lower limb.	C	Physiology Lab	*HOD Anatomy & Radiology dept.	3 + 3 Log book Entries fractures showing in x rays of upper & lower limb.
15.	Week 5	02-08-23 01.15pm-03.00pm	Identify common fractures showing in x rays of upper & lower limb.	A	Physiology Lab	*HOD Anatomy & Radiology dept.	3 + 3 Log book Entries fractures showing in x rays of upper & lower limb.

ASSESSMENT SECTIONS

ASSESSMENT POLICY:

1. First Professional examination will be held at the end of the first year MBBS class as per University of Health Sciences schedule.
2. All students must prepare all the subjects mentioned as per above sections including clinical skills and PERL. The assessment will be held in all three blocks, which were taught during first year MBBS.
3. There will be four papers in the first-year professional examination as per following:
    a) Paper 01 will be based on contents of Block No. 01.
    b) Paper 02 will be based on contents of Block No. 02.
    c) Paper 03 will be based on contents of Block No. 03.
    d) Paper 04 will be based on contents of Islamic Studies, Ethics, Professionalism, Research and Pakistan Studies.
4. All papers will based on written and Oral/Practical/Clinical examination except Islamic Studies, Ethics, Professionalism, and Pakistan Studies, which will be written only.
5. The written and Oral/Practical/Clinical examination will carry 150 marks each thus a total of 300 marks for each of the three block (Block No. 01, 02 & 03).
6. The total marks of first year MBBS will be 1000 out of which 100 marks will be IofIslamic Studies, Ethics, Professionalism, and Pakistan Studies but these 100 marks will not be included i determining the overall merit and position of the student.
7. Major component of the first will include:
    a) Anatomy including Applied and Clinical Anatomy.
    b) Physiology including Applied and Clinical Physiology.
    c) Biochemistry including Applied and Clinical Biochemistry.
8. The Applied and Clinical part of all the above three mentioned component will be based on Clinical correlations.
9. Minor Components of the year include Pathology, Pharmacology and Therapeutics, Community Medicine, Behavioral Sciences, Clinical Foundation 1 and PERL 1.
10. Written Examination:
    a) There will be one written paper for each of Paper 1, 2 & 3 of the Blocks.
    b) This written paper will be based on one best type MCQs (70%) and SEQs (30%).

c) Each MCQ will have five options (One best option and four distractors) and each will carry 01 Mark.

d) There will be no sections of SEQs and each will carry 05 Marks.

e) SEQs will only be from the major components of first year that is Anatomy, Physiology and Biochemistry and their Applied C and Clinical part as mentioned in Para 07.

f) There will be total 85 MCQs and 07 SEQs in each of three Block papers that is Block 01, 02 & 03.

g) The duration of written paper will be of 180 Minutes or 03 Hours.

h) MCQs part will be of 110 Minutes and SEqs will be 70 Minutes.

11. Oral/Practical/Clinical Examination:

a) There will an Oral/Practical and Clinical Examination for each of the three Blocks that is Block 01, 02 & 03.

b) There will total 12 OSPE/OSCE/Viva stations for each of the Oral/Practical and Clinical Examination of Block 01, 02 & 03.

i. There will be 07 Observed stations from major components areas for each of the Oral/Practical and Clinical Examination of Block 01, 02 & 03.

ii. There will be 02 Observed stations 01 each from C-FRC and PERLS of each Oral/Practical and Clinical Examination of Block 01, 02 & 03.

iii. There will be 03 Structured Viva stations in each Oral/Practical and Clinical Examination of Block 01, 02 & 03.

c) Each OSPE/OSCE Observed station will carry 08 Marks.

d) Each Structured Viva station will carry 16 Marks (08 Each for External and Internal Examiner).

e) Duration of Oral/Practical and Clinical Examination is 150 Minutes or 02.5 Hours).

f) Time for each OSPE/OSCE station will be 08 Minutes.

g) Time for each structured Viva will be 20 Minutes (10 Minutes each for each External and Internal Examiner.

12. Each student of First Year MBBS will have to appear in First Year Professional Examination as follows:

a) Block No. 01 (Foundation and Hemopoietic and Lymphatics Modules) 300 Marks.

b) Block No. 02 (Musculoskeletal System Module) 300 Marks.

c) Block No. 03 (Cardiovascular and Respiratory System Module) 300 Marks.

d) Islamiat/Ethics/Pakistan Studies 100 Marks.

13. No grace marks shall be allowed either in written or practical examination.

14. At least 25% MCQs and 25% SEQ shall cover Applied Clinical Cases scenario to assess high order thinking of First Year MBBS examination.

Block No. 01 (Foundation and Hemopoietic and Lymphatics Modules)

The examination of block no. 01 will be as follows:

1. One written paper of 120 Marks having following two parts:

a) First part includes 85 one best out of five options Multiple Choice Question (MCQs) with 85 total marks and allocated time will be 110 Minutes.

b) Second part include 07 Structured Essay Questions (SEQs) with 35 total marks and allocated time will be 70 Minutes.

c) Oral/Practical/Clinical Examination shall be of 120 marks.

d) The Continuous Internal Examination conducted by college of enrollment shall carry 60 marks (20% of the total 300 marks) of the Block. These 60 marks will be equally distributed for Written and Oral/Practical/Clinical Examination.

Block No. 02 (Musculo-Skeletal Modules)

The examination of block no. 02 will be as follows:

1. One written paper of 120 Marks having following two parts

a) First part includes 85 one best out of five options Multiple Choice Question (MCQs) with 85 total marks and allocated time will be 110 Minutes.

b) Second part include 07 Structured Essay Questions (SEQs) with 35 total marks and allocated time will be 70 Minutes.

c) Oral/Practical/Clinical Examination shall be of 120 marks.

d) The Continuous Internal Examination conducted by college of enrollment shall carry 60 marks (20% of the total 300 marks) of the Block. These 60 marks will be equally distributed for Written and Oral/Practical/Clinical Examination.

Block No. 03 (Cardiovascular and Respiratory Modules)

The examination of block no. 03 will be as follows:

1. One written paper of 120 Marks having following two parts:

a) First part include 85 one best out of five options Multiple Choice Question (MCQs) with 85 total marks and allocated time will be 110 Minutes.

b) Second part include 07 Structured Essay Questions (SEQs) with 35 total marks and allocated time will be 70 Minutes.

c) Oral/Practical/Clinical Examination shall be of 120 marks.

d) The Continuous Internal Examination conducted by college of enrollment shall carry 60 marks (20% of the total 300 marks) of the Block. These 60 marks will be equally distributed for Written and Oral/Practical/Clinical Examination.

Islamic Studies/Ethics/Pakistan Studies

The examination of Islamic studies/Ethics/Pakistan Studies will be as follows:

1. One written paper of 100 Marks having following pattern:

   a) First part include Islamic Studies/Ethics portion and it will include five Long Essay Question with a choice of three to attempt, each carry 20 marks and total 60 marks.

   b) Second part include Pakistan Studies portion and it will include four Long Essay Question with a choice of two to attempt, each carry 20 marks and total 40 marks.

2. The medium of instruction shall be English but Islamic Studies/Ethics can be attempted in Urdu.

Marks Distribution Table

Subject	Theory	Marks	Practical	Marks	Total
Foundation and Hemopeotic and Lymphatics Modules	Part I MCQs Part II SEQs	85 35	Oral/Practical/Clinical Examination	120	**300**
	Internal Assessment	30		30	
	Total	**150**	**Total**	**150**	
Musculo-Skeletal Module	Part I MCQs Part II SEQs	85 35	Oral/Practical/Clinical Examination	120	**300**
	Internal Assessment	30		30	
	Total	**150**	**Total**	**150**	
Cardiovascular and Respiratory Module	Part I MCQs Part II SEQs	85 35	Oral/Practical/Clinical Examination	120	**300**
	Internal Assessment	30		30	
	Total	**150**	**Total**	**150**	
Grand Total for Merit and Position					**900**
Islamic Studies/Ethics Pakistan Studies	Islamic Studies/Ethics 3 LEQs out of 5 LEQs			60	**100**
	Pakistan Studies 2 LEQs out of 4 LEQs			40	
	Total			**100**	
Grand Total					**1000**

REGULATION:

This examination shall be permitted to any students who:

1. Has been enrolled/registered and completed one academic year proceedings in a constituent or affiliated medical college of University of Health Sciences (UHS).
2. has his/her name been submitted for the purpose of examination to Registrar of UHS from Principal of constituent or affiliated medical college, where he /she is enrolled and eligible as per prerequisite of first year MBBS examination.
3. Has his/her marks of internal assessment of all the Blocks are submitted to Registrar of University of Health Sciences by the Principal of the college along with admission forms.
4. Produces the following certificates duly attested by the Principal of the medical college:
    a) Good Character.
    b) Attendance Certificate having not less than 75% attendance of full course in both lectures delivered and practical conducted in first year MBBS.
        i. Candidates failing short of attending lectures and practical conducted will not be admitted for the examination.
        ii. Student though will be allowed for next examination if they attend 75% of lectures delivered and practical conducted before the commencement of next examination by remaining enrolled as regular student of the college.
    c) Certificate of having passed all the Block examinations conducted by the college of enrollment with 50% cumulative percentage in aggregate of Block 1, 2 & 3.
5. The minimum passing marks shall be 50% in written and 50% in Oral/Practical/Clinical Examination and 50% as an aggregate, independently and concomitantly at one and the same time of first year MBBS examination.
6. Minimum numbers for Passing Islamic studies / Ethics and Pakistan Studies shall be 33% as an aggregate.
    a) Islamic Studies/Ethics and Pakistan Studies can be passed any time before final year MBBS examination.
    b) Marks of Islamic studies/Ethic and Pakistan studies shall not be counted towards the professional examination total marks and determination of position.
7. If there is a discrimination of less than 50% marks awarded in the Internal and External Examiners in any segment then UHS hholds the right to review and or re-examine the individual case.
8. Candidates securing more than 85% marks in any of Block will be declared as distinction in the Block subject he/she secured 80% marks in written component of that paper. Similarly, If he/she does not pass in first year examination as a whole at and same time shall not be declared to have a distinction in single Block or paper.
9. Any candidate failing to clear one or more papers in annual examination shall be provisionally allowed to join second year. He/she must clear that failed paper in supplementary examination within 4 weeks' time frame, failing to do he/she will be detained back in first year. Under no circumstances he/she shall be proted to second year MBBS profession until and unless he/she cleared the failed papers.

10. If a student appear by any chance for the first time in Supplementary examination as he/she did not appeared in annual examination and failed to clear one or more papers shall be detained in same first year class, no provisional joining in next class shall be allowed.
11. Any student failed to clear first year MBBS in four consecutive attempts inclusive of availed or unavailedafter being eligible for examination shall be expelled from college and shall not be allowed to continue MBBS or BDS studies in the college or shall not be allowed to get admission as fresh candidate in either MBBS or BDS.
12. Every candidate shall submit their admission to Registrar of UHS through Principal of the college where he/she is enrolled and completed first year MBBS.
13. The marks of internal assessment shall be submitted to Controller of Examination of UHS within 02 weeks after completion of each Block 1, 2 & 3 examination. No Internal Assessment will be accepted after the commencement of annual examination.
14. Parent Teacher Meeting should be schedule after every Block to share the attendance, internal assessment and performance of the students with their parents and University of Health Sciences.
15. Fresh internal assessment for supplementary examination shall not be permissible.
16. Fresh internal assessment for detained students can be submitted
17. A proper continuous internal assessment record shall be maintained by respective departments of the medical college.
18. If he/she submitted admission for after the due dates, the student will have to pay double of the normal fee as per notified schedule by the Registrar of University of Health Sciences before the commencement of examination. Medical College ahall also deposit a fine of PKR 50,000 as a fine to UHS.
19. The candidates will submit their respective fee to UHS through Principal of their College. Principal will deposit student fees through bank draft or pay order or cross cheque in the name Treasurer University of Health Sciences along with admission forms.

MBBS 1ST Professional

Paper 2

Theme	Written Exam				Oral/practical/clinical Exam			
	Subject	MCQ 1 Mark	SEQ 5 Marks	Marks	OSPE/OSCE/Viva Station			Marks
					OSPE 8 Marks each observe	OSCE 8 Marks each observe	Structured viva 16 Marks each	
Normal Structure	Anatomy & Applied/clinical	35	4	55	5	-	1	56
Normal Function	Physiology & Applied/clinical	17	2	27	1	-	1	24
	Biochemistry & Applied/clinical	11	1	16	1	-	1	24
Disease Burden & Prevention	Community Medicine & Public Health	06	-	06	-	-		-
	Behavioral Sciences	04	-	04	-	-		-
Pathophysiology & Pharmacotherapeutics	Pathology	07	-	07	-	-		-
	Pharmacology	05	-	05	-	-		-
CFRC	CF 1-2	-	-	-	-	1		08
PERLS	PERL 1-2	-	-	-	-	1		08
		85	7x5=35	120	7 Stations x 08 = 56	02 Stations x 08 = 16	3 Vivas x 16 = 48	120

Academic Calendar First Year
2023

WHITE COAT CEREMONY	**1st March 2023**
BLOCK 1 ● **Spring Break** ● **Foundation Module (8wks)** ● **H&L Module (3wks)** ● **Block 1 Exam**	**1st March to 2nd June 2023 (12 Wks + 1 wk Spring Break)** ● **1st April to 7th April 2023** ● **1st March to 5th May 2023** ● **8th May to 26th May 2023** ● **29th May - 2nd June 2023**
BLOCK 2 ● **Summer Break** ● **MSK Module (9wks)** ● **Block 2 Exam**	**5th June to 1st Sept 2023 (9 wks + 4wks Summer Break)** ● **16 June to 13th July 2023** ● **5th June to 25th August 2023** ● **28th August – 1st September 2023**
BLOCK 3 ● **CVS Module (7wks)** ● **Respiratory Module (4wks)** ● **Block 3 Exam** ***REVISION***	**4th September to 24th November 2023 (12 Weeks)** ● **4th September to 20th October 2023** ● **23rd October to 17th November 2023** ● **20th -24th November 2023** **25th November to 8th December 2023**
PREPARATORY LEAVES (4wks) **Winter break**	● **09 Dec 2023 to 11 Jan 2024** ● **25th December to 31st December 2023**
PROFESSIONAL EXAMS	**12 Jan 2024**

RESOURCE BOOKS:

ANATOMY:

- Langman's Medical embryology
- Snell's Clinical Anatomy
- Snell's Clinical Neuroanatomy. Walter Kluwer
- Laiq H.S. Medical histology Paramount Books
- Laiq H.S. General Anatomy Paramount books

PHYSIOLOGY:

- Guyton & Hall Textbook of Medical Physiology Latest Edition
- Essentials of Medical Physiology by Mushtaq Ahmad

BIOCHEMISTRY:

- Harper's Illustrated Biochemistry by Mayes Peter A. Murray, Robert K., and Granner, Daryl K. Latest edition
- Lippincott's Illustrated Reviews: Biochemistry Champe P.C. Harvey, E.A Latest Edition
- ABC of Clinical genetics by H.M. Kingston

PATHOLOGY:

- Robbins & Cotran Pathologic Basis of Disease. Vinay Kumar, Abul K. Abbas, Jon C. Aster latest edition
- Pocket Companion to Robbins & Cotran Pathologic Basis of Disease, Richard N Mitchell & Vinay Kumar & Abul K. Abbas
- Walter and Israel General Pathology

PHARMACOLOGY:

- Basic and Clinical Pharmacology latest Edition by Bertram Katzung
- Lippincott Illustrated Reviews: Pharmacology Book by Karen Whalen

BEHAVIOURAL SCIENCES:

- Handbook of Behavioural Sciences by Mowadat H Rana
- Medical and Psychosocial Aspects of Chronic Illness and Disability, Donna Falvo, PhD, RN; Beverley E. Holland

COMMUNITY MEDICINE:

- Park's Textbook Of Preventive And Social Medicine Unknown Binding – by K. Park
- Public Health and Community Medicine Ilyas, Ansari

SURGERY:

- Bailey & Love Short Practice of Surgery

MEDICINE:

- Davidson's Principles & Practice of Medicine

ISLAMIAT:

- Standard Islamiyat (Compulsory) For BA, BSC, MA, MSC, MBBS By Prof. M Sharif Islahi
- Ilmi Ialamiyat (Compulsory) For BA, BSC & equivalent